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AUTHOR Lall, Geeta Rani
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ABSTRACT

From a literature review, the author summarizes the etiology, treatment, and educational aspects of hyperactivity in children. Listed are two sets of questions which represent the differences between the behavior patterns of preschool and school-aged hyperactive and control groups. Questioned is the use of drug therapy and considered are such causes of hyperactivity as improper oxygenation, low level of glucose or inability to tolerate and assimilate sugar, vitamin deficiency, and improper lighting. Several techniques for the teacher to use in helping the hyperactive child in the classroom are noted to include individualized instruction, behavior modification using rewards, effective seating arrangements, and as much physical activity as possible. (SB)

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HYPERKINETIC CHILDREN - A SYNOPSIS OF POSSIBLE CAUSES, TREATMENTS, AND EDUCATIONAL ASPECTS

by
Geeta Rani Lall, Ph.D.
Assistant Professor of Early Childhood
and Special Education

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HYPERKINETIC CHILDREN - A SYNOPSIS OF

POSSIBLE CAUSES, TREATMENTS, AND EDUCATIONAL ASPECTS

Eleven year old Max Kinesis acts and talks on impulse. He is impatient, easily upset, and is in continual motion. For more than a few minutes it is impossible for him to concentrate. At home he is restless, whiney, disobedient, and constantly in trouble. In school he is readily distracted, rarely finishes his work, and tends to clown. And in class he talks out of turn. The situation sums itself up that Max is generally a discipline problem.

What's wrong with Max? Nothing perhaps. Perhaps something.

That something is often described as hyperkinesis. Hyperkinesis is also known as hyperactivity and minimal brain dysfunction. The term is derived from hyper + kinesis (a Greek root meaning "action").

In recent times hyperkinesis has formed the subject of varied and interesting studies. One such study by Dr. Mark Stewart is important in that it develops specific guidelines concerning the behavior of hyperactive children. In this study the behavior of a sample group of hyperactive children was compared with that of a control group of normal children. The children were selected on the basis of predetermined symptoms. The results of the study indicated that the hyperkinetic or hyperactive children were markedly different from the control group (Stewart, 1970).

Dr. Stewart found the following questions represent the most significant differences between the behavior patterns of the hyperactive and the control groups. The guidelines are age-related and categorized on that basis.

Questions Relative to a Preschool Youngster

Does the child consistently stay up half the night and then wake up at the crack of dawn?

Is he far more active, restless, and energetic than other children of his age group?

Does his attention span seem shorter than that of other children his age?

Does he throw temper tantrums for trivial reasons and do this regularly and often?

Is the child so hard on things that he has worn out or broken his playpen, crib, or tricycle, etc.?

Is the child persistently impulsive? Does he run into the street, play with electrical sockets, jump from dangerous places, or drink household cleaner, etc.?

When the child is outside, does he need supervision more closely than other children for fear he will run off or do something wild?

Does he bite, kick, scratch other children, or attack them often?

Is he unusually willful and disobedient?

Questions Relative to a School-age Youngster

Does the child find it hard to sit still? Does he seem to have boundless energy?

Does his attention span appear shorter than that of other children his age, especially for things which require effort?

Does he talk, fidget, rock, drum his fingers?

Does his emotion swing rapidly from excitement to anger? Does he cry easily and often?

Is he hard to get to bed at night?

Is it his habit to continually get up from the table or play during mealtimes?

Does he have trouble at school, either in his academic work or in his behavior?

Does the child usually leave projects unfinished?

Does punishment seem to have little beneficial effect on his behavior?

Does he seem unhappy much of the time? Is he whiney and irritable? Does he complain that "no one likes me"?

If several of these questions are answered by an emphatic "yes," then the child could probably and readily be termed hyperactive. Professional counsel in most cases is recommended at this time (Stewart, 1970).

Causes and Treatment of Hyperactivity

Drugs for treating hyperactive children were first used in 1937 at a children's residential treatment center in Providence, Rhode Island. The man operating the center tried amphetamines on a group of children who were unmanageable. He found, much to his surprise, that the drugs were extremely beneficial and had a "paradoxical effect." They sped up adults but slowed down some hyperactive children (Wender, 1974). Since that time many new drugs have been developed and studied.

In March 1971 a panel of experts appointed by the Health, Education and Welfare Department of the United States declared amphetamines to be a safe

and proper treatment for hyperkinetic children. The HEW panel stated that "fears commonly expressed about the use of drugs for children, such as the possibilities of misuse, addiction, toxicity, and emotional handicaps... (are not dangers) if the treatment is properly applied (Bazell, 1971).

The administration of drugs for treatment may tend to lend credibility to the theory that hyperkinesis is a specific disease. However many authorities, including psychiatrists and physicians, now feel that hyperkinesis is a syndrome or a collection of symptoms--not a disease--which may be the result of a specific disorder of the central nervous system. Many psychiatrists believe that even though "stimulants are not getting at the causes of a hyperactive child's problem," (they have) "seemed at least to interrupt the characteristic record of failure in school and make it possible to treat a child by other methods" (Scientific American, 1974).

Is there, then, adequate justification in prescribing amphetamines or drugs of similar nature to hyperactive children, when the drug is not really dealing with the causative factors? Are the drugs masking the real problem by covering up some of its symptoms? These questions are basic to the criticism leveled against the practice of drug therapy. The feeling is strong among experts that stimulants should never be prescribed to hyperactive children. Some experts hold that the hyperactive child's problem can almost always be identified if the physician is willing to take the time and trouble to run through diagnostic tests and evaluate the resulting quantitative data. The underlying problem may turn out to be psychiatric, neurochemical or neurophysiological. Since hyperactivity is usually indicative of brain dysfunction, it is only sensible to look for the malfunctioning in the neurophysiological processes related to the brain (Walker, 1974).

Walker (1974) found that improper oxygenation can cause changes in behavior. One such case involved a five-year-old hyperactive child diagnosed by a neurologist as schizophrenic. The neurologist reported to the parents that nothing was physically wrong with their daughter. Love her and make the best of it, he said. This same child was brought to Dr. Walker, who did a complete physical and neurological examination. Problems were discovered with the retina in the eye (diagnosed improperly by an opthalmologist) which told him the retinal veins were congested with blood. The doctor immediately recalled that this condition at times indicates a heart problem. The child did have a slight heart murmur which a pediatrician had previously found and thought benign. Next, she was referred to a cardiologist who determined that she had an extra vessel between the heart and the lung which was preventing a normal flow of oxygen to the brain. Surgery was performed to correct the defect, and the child's hyperactivity, fatigue, rages, tantrums and other symptoms which she experienced from birth, disappeared. Thus a child diagnosed as a hyperactive, hopeless schizophrenic became a "normal" child. In addition she was saved from certain death a few years later due to her cardiac condition.

Another condition that can lead to hyperactivity is a low level of glucose or an inability to tolerate and assimilate sugar. The function of the brain is directly affected by the level of glucose in the blood stream. If the level is abnormal there may be subtle symptoms of brain dysfunction, including hyperactivity. Walker's treatment of an eight-year-old boy illustrates this fact. The boy was determined to be pre-diabetic and he was placed on a high-protein, low-carbohydrate diet. Soon his hyperactivity abated. He began doing well in school and his aggressive tantrums stopped.

Studies reveal that hyperactivity is caused by a number of other factors as well. Deficiencies in vitamins, minerals, body enzymes and particularly calcium seem to have a direct influence. Glandular problems, brain lesions, cyanosis at birth, mixed dominance (bilaterality), and artificial food flavors and colors are other neurophysiological causes related to the brain dysfunction (Walker, 1974). Prenatal developmental problems, inherited traits, and home atmosphere can also cause hyperactivity. Even emotional problems can be causative factors although they are normally the result of hyperactivity rather than the cause of it.

Another possible cause of hyperactivity, one under research at the present time, is the type of artificial light used in schools. It has been shown that hyperactivity can be stimulated by certain kinds of fluorescent lights. Thus far in the study the hyperactivity appears to be due to a radiation stress condition. The premise is that fluorescent lights give off X-rays that may trigger this condition. There is evidence to substantiate this through a study done over a period of fifty years by time-lapse photographer John Ott, President of Health and Light Research, Inc., Sarasota, Florida. In his work with the effect of different kinds of lights on plants Mr. Ott found that certain rays are missing in many artificial lights and growth of plants in these situations is poor. In continuing his experiment with rats, mice and rabbits, he discovered that male animals in particular become irritable and tend to cannibalize their young when kept under standard fluorescent lights for various periods of time.

In 1972, in Sarasota, Florida, Ott was able to determine that some of the hyperactive children in a special school came from homes that had

leaking X-ray television sets. When the sets were removed or repaired, the children were no longer hyperactive. Ott's work still needs to be expanded and confirmed by other investigators before conventional fluorescent lighting can be definitely indicated as a cause of hyperactivity (Archart-Treickel, 1974). But, if the results do lead to an indictment, there should be some interesting and enormous aid for children and teachers in the classroom setting.

Educational Aspects for Hyperactive Children

Educators have a special responsibility to hyperkinetic children. In the classroom setting ways must be devised to help them reach their potential as successful children.

To better understand the hyperactive child the teacher needs reports from the professional personnel who work with the child. He also needs to work closely with the parents. After obtaining as much background as possible concerning the hyperactive child, and also evaluating the data in terms of home, school, and community resources that are available for use, a much better program can be devised to meet the needs of children, parents, teachers, and the community.

Several methods and techniques can be used in the classroom to help the hyperactive child. First of all, it is necessary for a teacher to individualize instruction. A teacher who uses this technique usually understands that each child has his own way and rate of learning. Knowing that each child has different abilities and deficiencies, he adjusts his teaching approach to suit the needs of each child as much as is possible (Keogh, 1971).

Signing contracts with these students which are set up under the terms of both the teacher and the student is one method which seems to work well with hyperactive children. The child agrees to complete a certain amount of work or do a project within a specified time period. This allows the student to work with freedom. He does not contend quite so rigidly with the constraints put upon the "normal" child.

Hyperactive children are often used to being punished for something they did or did not do. In most cases punishment is non-effective (Stewart, 1970). If this is the case, the behavioral modification program, or some form of it, in terms of rewards will prove helpful to the child. It will point to the "good" he accomplishes rather than emphasizing the opposite behavior. Rewards in the classroom need not be something to eat (although with very small children this is more concrete) but may be privileges or special free time to do "his own thing." Teachers need to remember to reward the effort put forth as well as the actual achievement of some goal. Too often this is forgotten.

The seating arrangement is also very important in helping a hyperactive child perform to the best of his ability. It is necessary that such a child be placed in a position to compensate as much as possible for his overactive personality, distractability, impulsiveness and excitability.

Children need quiet places to be able to work by themselves when they are engaged in projects that require close concentration. This must be a place where they will not be disturbed by other children in the room. Study carrels are ideal for this. Some children will discover their own private places by retreating to a corner in a workroom or even by crawling under a

table or desk. A special place can also be used as an isolation spot for the purpose of giving the child time to "get himself together." In addition to being away from the rest of the class, the special place provides a release from distractable objects.

The teacher himself must be able to keep order without shouting at the children. A hyperactive child usually lacks in self-control and reinforcing his negative actions by shouting simply adds to his own lack of self-control. It is humiliating to a child to be thus singled out in front of the class.

One of the most, if not the most, important aspect in teaching the hyperactive child is that the program must include as much physical activity as possible. This is necessary to allow for expenditure of the excess energy that builds up within such a child. It is a well known fact that children learn more by doing than by reading and listening. Therefore if the child is actively involved in constructive projects, he will learn more, enjoy school more, and most likely get along better.

A good physical education program is usually more beneficial to the hyperactive child than to the "normal" child. If a physical education program is not possible on a daily class basis, some organized activities may be arranged at recess. Such activities must include vigorous exercises (Stewart, 1970).

Lengthy assignments are almost impossible for a hyperactive child to complete. Reading, writing and other academic subjects can be taught through projects, assignments and homework if they are brief and to the point. Repetitious assignments also should be avoided as they confuse and frustrate the child.

The teacher is in a key position to help a child in trouble. Simple interest and affection can go a long way. Whether a teacher is a male or a female is not as important as the teacher's ability and personality. However, studies have shown that boys, especially hyperactive boys, respond better to men teachers in the classroom (Stewart, 1970).

It is possible for the child to obtain help through special classes on a full or part-time basis. It may even be necessary to provide personnel and time for counseling with the children who have become emotionally disturbed as a result of their hyperactivity and frustrations from not being able to do as well in classwork. Community and social agencies are always available and willing to work with the school in helping hyperactive children, (or any child) in growing up and developing into successful and normal human beings.

For the relatively few hyperactive children who fail to respond to this type of positive program in the school, it may then become necessary to resort to special remedies. A well qualified doctor, after extensive and thorough examinations and diagnosis, may prescribe appropriate treatments, including drug therapy and orthomolecular psychiatry.

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